If you have any questions during this training session please contact Jennifer Ambrose, Environmental Health and Safety (EHS) Officer at 526-6342 or via email jambrose@calvin.edu

This training contains 88 slides. It should take approximately 1-1.5 hours.

Talk to your supervisor about specific applications of this information for your work area.
Calvin College New Employee Safety Orientation: Level 200

- Health and Safety Policy
- Reason for Training
- Responsibilities
- Written Health Safety and Health Program
- Work Related Injuries
- Fire Safety
- Open Flames
- Crowd Management
- Ergonomics
- Hazard Communication

- Bloodborne Pathogens
- Slips, Trips and Falls
- Ladder Safety
- Electrical Safety
- Personal Protective Equipment
- Waste Disposal
- Lab Safety
- Radiation Safety
- Awareness of Physical Plant Activities
- Additional Information
At Calvin College, we believe that every employee, student, and guest is entitled to a safe and healthful workplace.

We are committed to protecting our students, faculty, staff, and visitors, lessening our impact on the environment and complying with governmental regulations.
OSHA (Occupational Safety & Health Administration) and MIOSHA (Michigan OSHA) create safety standards for employers to follow to assure safe and healthy work conditions for employees.

Calvin is required by law to provide training and maintain a safe workplace.
MIOSHA strongly recommends that each employer have a written and implemented safety and health program that addresses the following areas:

- management commitment
- employee involvement
- worksite analysis
- hazard prevention and control
- safety and health training

To read Calvin’s program go to [Written Safety & Health Program](#)
Responsibilities

Supervisors are responsible for:
• Protecting the safety of those they supervise including students and visitors
• Ensuring that those under their supervision receive safety training
• Knowing and enforcing all Calvin College safety, health and environmental protection policies and procedures

You are responsible for:
• Following all Calvin College safety, health, and environmental protection policies and procedures
• Promoting and supporting safe work among your peers
• Asking questions and voicing your concerns about health and safety issues with your supervisor or the EHS Officers
Work safely, don't take chances, watch out for each other, and use safe equipment. Wear appropriate personal protective equipment.

As a supervisor, be proactive. Aid employees in recognizing dangerous situations.

Fill out an Employee Injury Report Form for anything beyond a scratch or bump. The form must be signed by the injured person and their supervisor. Send the form to EHS.

Your supervisor must be informed about the injury and the form must be filled out within 24 hours of the injury.

If medical care or first aid is needed, call Campus Safety at 526-3333.
MED-1 is Calvin’s occupational health care provider. If an injury requires more than first aid, you will need to go to MED-1. You will need to obtain a treatment authorization form from Environmental Health and Safety, Campus Safety Supervisor, or one of the Physical Plant Custodial Supervisors.

Campus Safety does not transport injured people. Campus Safety will coordinate transportation when possible. Usually, supervisors, co-workers, or EHS officers provide transportation. If needed, a second person will be asked to ride along. For instance, if the injured person is actively bleeding, emotionally upset, or may need assistance during the drive to MED-1, a second person will be asked to ride along.

The Campus Safety Officer and/or Campus Safety Supervisor will call for emergency medical treatment (EMT) or an ambulance when indicated.

Some medical emergencies cannot be handled at MED-1 and require an ambulance ride to the emergency room. The things that MED-1 states that they cannot treat are crushing chest pain, continued loss of consciousness, and amputation where re-attachment is required.
Occupational Injury Log

Work-Related Injuries and Illnesses must be recorded on MIOSHA Form 301.

This report is maintained by the EHS office.

Recordable injuries and illnesses are those that involve:
- Loss of consciousness
- Restricted work activity or job transfer
- Days away from work
- Medical treatment beyond first aid
- Injury from contaminated sharps
Automated External Defibrillators

Calvin College has a public access defibrillation program and several Automated External Defibrillators (AEDs) for use by any member of the community who has CPR and AED training.

AED locations:

- In each Campus Safety patrol car
- Chapel narthex - Column on west side of room
- Commons - at Johnny’s food court entrance
- Covenant Fine Arts Center – 1st floor near art gallery
- DeVos Communications Center -1st floor lobby
- DeVries Hall - 1st floor atrium near elevator
- Hekman Library - 2nd floor main entrance
- Hekman Library - 3rd floor hall near where library meets HH
- North Hall - 1st floor lobby across from Science Division office
- Physical Plant - alcove leading from lunch room to warehouse
- Prince Conference Center lobby - next to the front entrance
- 2041 Raybrook - North stairwell
- Seminary - Burton entrance
- Seminary - Study area
- Spoelhof Fieldhouse Complex (SFC) - 2nd level hall near HC 107
- SFC - Athlete’s Fitness Room, 2nd level VN110
- SFC - Athletic Trainers Office, 2nd level VN 137
- SFC - Fitness Center, northwest wall in SF 201
- SFC - Health Services near north end of offices
- SFC - Huizinga Tennis & Track near reception desk
- SFC - VanNoord Arena, 3rd level entrance near men’s restroom
- SFC - Venema Aquatic Center, 3rd level main entrance
- SFC - Venema Aquatic Center pool office
- Youngsma Center - 1st level kitchen
When a person experiences signs & symptoms of a heart attack or is unresponsive:
• Call for help
• Call Campus Safety
• Send someone for the nearest AED
Calvin College Campus Safety will respond.
Cardiopulmonary resuscitation (CPR) and automated external defibrillation (AED) is provided as appropriate until the local EMS arrives to assume responsibility.
Sign up for CPR/AED training (offered free for employees each summer) and become one of the people who are prepared to help.
Campus Safety Officers (CSO) are the designated “first aid responders” at Calvin College for student, faculty, staff and visitor injuries.

Calvin employees are encouraged to call Campus Safety whenever first aid is required. Before the CSO arrives, first aid supplies found in the department first aid kit can be provided for an individual to use themselves, such as gauze pads to hold on a wound to stop bleeding.

Precautions must be taken to prevent employees who have not had training on bloodborne pathogens from being exposed to blood and body fluids.
Activate the nearest fire alarm pull station.
Alert people in your area of the danger.
and to evacuate, assisting those with disabilities.
Shut down any equipment which may add fuel to the fire.

NEVER ASSUME IT IS A DRILL!

All classes should be immediately dismissed, even if you are giving a test.
Immediately exit the building, closing doors between you and the fire. Do NOT use elevators!

Go to your department’s gathering place, staying at least 300 feet from the building.

If you have information about the fire, call Campus Safety after reaching a place of safety.
Fire Safety

**IF CAUGHT IN SMOKE:**

Drop and crawl toward an exit.

Hold your breath as much as possible.

Breathe slowly through nose using a towel or shirt as a filter.

**IF TRAPPED IN A ROOM:**

Close as many doors as possible between you and the fire.

Place cloth material (wet if possible) around or under the door to prevent smoke from entering the room.

Call Campus Safety or 911.

Be prepared to signal to someone outside at a window or by shouting at regular intervals.
Fire Extinguishers

Users must be trained on:

- how to use
- what the limitations are of each type of extinguisher

Training is available through the EHS Office.

In case of fire, your top priority is to evacuate and **Pull the Alarm** on your way out.

Call Campus Safety when you are a safe distance from the fire.

Only try to extinguish a small fire if you have been trained.
Open Flames Policy

Open Flames

- The use or possession of open flame devices in academic/support buildings is restricted.
- Open flame devices include, but are not limited to, candles, potpourri burners, torches, bonfires, oil lamps, incense, butane burners or any other flame producing device.
- You must obtain an open flame permit from EHS or Campus Safety before using an open flame device.
Event organizers are responsible for crowd control and management of their event.

Events with 50-250 people shall have a minimum of one trained crowd manager.

If the occupant load for the event exceeds 250, additional trained crowd managers shall be provided at a ratio of 1 : 250 occupants.

If you will be planning events with 50 or greater in attendance contact EHS for more in depth crowd management training.
Crowd manager general responsibilities (ACE):

Aisles need to be kept clear and unobstructed at all times. No sitting or standing is permitted in aisles or egress paths to exits.

Capacity of the venue must be known and enforced.

Exits need to be kept clear, inside and outside, at all times. All exits should be clearly marked and illuminated.
Ergonomics

The science of “designing the job to fit the worker, not forcing the worker to fit the job.”

Ergonomics covers all aspects of a job including the physical stresses it places on joints, muscles, nerves, tendons and bones.

Physical stressors include:

- **Repetitive motions**
- **Typing**
- Continual use of a manual screwdriver
- **Working in an awkward position**
  - holding a telephone to your ear with your shoulder
- **Vibrations**
  - using a jackhammer
- **Excessive force**
  - lifting a heavy box of books
Ergonomics

- Keep your head balanced naturally over your shoulders (not protruding in front of your body).
- Keep your shoulders relaxed, not hunched.
- Keep your forearms and thighs parallel to the floor.
- Sit back in your chair for support (not on the front edge).
- Adjust the back of your chair for support.
- Settle your feet on the floor or footrest.
Listen to the signals your body gives you.

If you suffer pain in the wrists or hands after a long day of typing, examine your work area and work practices to see if they may be causing the problems. Try these adjustments:

• Raise or lower your chair to avoid typing with your wrist at an odd angle.
• Adjust computer monitors to avoid glare.
• Take frequent breaks from repetitive tasks to give your body a rest.
• Sometimes small modifications to work procedures, posture, habits, and/or work station design can make a big difference in the way you feel at the end of a day. Environmental Health and Safety conducts free ergonomic evaluations. If you feel that you could benefit from an ergo evaluation – contact jambrose@calvin.edu
The MIOSHA (Michigan Occupational Safety and Health Administration) Hazard Communication Standard is designed to protect employees who use hazardous material on the job.

Companies which produce and use hazardous materials must provide their employees with information and training on the proper handling and use of these materials.

You, as an employee, have a Right to Know about the hazardous materials used in your work area and the potential effects of these materials upon your health and safety.
Hazard Communication – MIOSHA Expectations

- Employees must be aware of their exposure to hazardous chemicals.
- Employees must know how to read and use the MSDS/SDS and labels.
- Employees must follow appropriate protective measures.
- Employees must know how to access Calvin’s Hazard Communication Plan.
OSHA/MIOSHA have recently adopted the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). GHS had been adopted by 67 nations to:

- provide a common and coherent approach to classifying chemicals
- reduce confusion and increase understanding of the hazards
- facilitate training
- help address literacy problems
Chemicals will be classified using a harmonized system that provides standardized language for:

• Health hazards
• Physical hazards
• Environmental hazards
In GHS there are several new label elements:

- Symbols called “Pictograms”
- Signal Words – Danger & Warning
- Hazard Statements
- Precautionary Statements
- Product Identification
- Supplier/Manufacturer Identification
There are nine pictograms in the new Hazard Communication (HazCom)/GHS standard.

Eight are regulated by MIOSHA, one by the DEQ.
Hazard Communication

**Acute toxicity**
- Fatal or toxic

**Acute toxicity (Less Severe):**
- Irritant
- Dermal sensitizer
- Acute toxicity (harmful)
- Narcotic effects
- Respiratory tract irritation
Hazard Communication

Health Hazard

Skin corrosion
Serious eye damage/
Eye irritation

Health Hazard

Carcinogen
Respiratory sensitizer
Reproductive toxicity
Target organ toxicity
Mutagenicity
Aspiration Hazard
Hazard Communication

Physical Hazard

Explosives
Self reactives
Organic peroxides

Physical Hazard

Flammables
Pyrophorics
Self heating
Emits flammable gas
Self reactives
Organic peroxides
Environmental Health and Occupational Safety

Hazard Communication

Physical Hazard

Corrosive to metal

Gases Under Pressure

Physical Hazard

Oxidizers

Physical Hazard
Labels for Secondary Containers

A “secondary container” is defined as any container being used, beyond the original manufacturer’s bottle that the chemical was shipped in. Labels must be consistent with the revised Haz Com standard and contain no conflicting hazard warnings or pictograms. Employers may use written materials (e.g., signs, placards, etc.) in lieu of affixing labels to individual stationary process containers.
“OLD” Labeling systems*

HMIS Label

NFPA Label

New Labels*

*Important note regarding ranking hazards. Under the old labeling systems hazards are ranked from 1 to 4, 4 being the most severe. In the new system hazards are ranked 4 to 1, 1 being the most severe. Don’t rely on the numbers! Look at the entire label and all hazard warnings.
Under the new Haz Com Standard, Material Safety Data Sheets (MSDS) are now called Safety Data Sheets (SDS). A SDS is a guide, provided by the manufacturer, for working safely with a chemical.

The college must have an SDS for each hazardous chemical on campus.

All SDSs will have a consistent 16-section format.

Employers must ensure that SDSs are readily accessible to employees.
The 16 section format will include:

Section 1 – Identification
Section 2 – Hazard(s) Identification
Section 3 – Composition / Information on Ingredients
Section 4 – First-aid Measures
Section 5 – Fire-fighting Measures
Section 6 – Accidental Release Measures
Section 7 – Handling and Storage
Section 8 – Exposure Controls / Personal Protection
Section 9 – Physical and Chemical Properties
Section 10 – Stability and Reactivity
Section 11 – Toxicological Information
Section 12 – Ecological Information*
Section 13 – Disposal Consideration*
Section 14 – Transport Information*
Section 15 – Regulatory Information*
Section 16 – Other information including date of preparation of last revision

*Sections outside of MIOSHA jurisdiction but these sections must be included for a GHS compliant SDS.
All Safety Data Sheets for chemicals/chemical products used at Calvin College are available online.

Your computer should have a (M)SDS Online icon on the desktop:

• Click on the icon and it will take you to the Calvin College SDS site.

• Select the department you work in and then search for the chemical/product you are looking for.
Chemical exposure may cause/contribute to many serious health effects, such as:

- Heart ailments
- Kidney and lung and other vital organ damage
- Sterility
- Cancer
- Burns
- Rashes

Health effects may be acute or chronic. "Acute" effects usually occur rapidly as a result of short-term exposures, and are of short duration. “Chronic" effects generally occur as a result of long-term exposure, and are of long duration.
*Possible Health Hazards:

- Acute Toxicity
- Skin Corrosion/Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Specific Target Organ Toxicity – Single Exposure
- Specific Target Organ Toxicity – Repeated Exposure
- Aspiration
- Simple Asphyxiants

*Each of the chemical health classifications are further defined and described in Appendix A of the Hazard Communication Standard.*
Hazard Communication

*Possible Physical Hazards:

- Explosives
- Flammable Aerosols
- Oxidizing Gases
- Gases under Pressure
- Compressed Gases
- Liquefied Gases
- Refrigerated Liquefied Gases
- Dissolves Gases

*Each of the chemical health classifications are further defined and described in Appendix B of the Hazard Communication Standard.
Hazard Communication

*Possible Physical Hazards continued:

- Flammable Liquids
- Flammable Solids
- Self-Reactive Chemicals
- Pyrophoric Liquids
- Pyrophoric Solid
- Pyrophoric Gases
- Self-heating Chemicals
- Chemicals, which in contact with water, emit flammable gases

*Each of the chemical health classifications are further defined and described in Appendix B of the Hazard Communication Standard.
Possible Physical Hazards continued:

- Oxidizing Liquids
- Oxidizing Solid
- Organic Peroxides
- Corrosive to Metals
- Combustible Dusts

*Each of the chemical health classifications are further defined and described in Appendix B of the Hazard Communication Standard.
Hazard Communication

Reducing Your Chance or Exposure to Hazards

Know about chemicals you are using:

- Read the label and SDS
- Know where to find the SDS
- Use protective clothing and equipment to prevent chemical contact
- Wash your hands!!!!
- Handle chemicals carefully
- Do not eat, drink, smoke, touch your eyes/contacts or apply cosmetics while using hazardous materials
- Never use laboratory microwaves, refrigerators or ice machines for food preparation
Bloodborne Pathogens

Definition – Bloodborne pathogens (BBP) are microorganisms such as viruses or bacteria that are carried in blood or other body fluids and can cause disease.
Bloodborne Pathogens

• Employees who are, or have the potential to be, exposed to BBP while performing their jobs need further BBP training and immunizations (Hepatitis B vaccine).
• If your job duties include tasks that may cause you to come into contact with blood or other potentially infectious materials you are eligible to receive the Hepatitis B vaccine. Notify EHS if you have not been offered the vaccination series.
• Employees whose jobs do not normally expose them to BBP need to know who to call and what NOT to do!!
Bloodborne Pathogens

Modes of BBP transmission:

- Sexual contact
- Sharing of hypodermic needles
- From mothers to their babies
- Accidental puncture from contaminated needles, broken glass or other sharps
- Contact between broken or damaged skin and infected body fluids
- Contact between mucous membranes and infected body fluids
Bloodborne Pathogens

- Do not touch or clean up anybody else’s blood or other body fluid.
- You are not expected to administer First Aid.
  - For First Aid, Call Campus Safety by dialing 3-3333 (campus phone) or 526-3333 (cell phone)
- If blood or body fluids are spilled, call Campus Safety or Physical Plant. The area will be properly disinfected and contaminated materials will be disposed of in accordance with regulatory requirements.
- Dispose of broken glass in rigid, closed containers.
Bloodborne Pathogens

- Needles from self administered injections must not be disposed of in bathroom, dorm or office waste baskets.
- Immediately place any personally owned and contaminated sharps in your own container.
Slips, Trips and Falls

Corridors, Stairs and Flooring

• Keep all corridors & passageways clear of debris, boxes and storage. Never block these areas, even temporarily. Emergencies don’t usually come with advanced warning and are not likely to give you time to clear cluttered escape paths.

• Keep stairwells clear at all times. Do not store boxes, files, or other items in the stairwells or landings.

• Pick up dropped pencils & other things that can cause you or a co-worker to skid.

• Wipe up wet areas immediately. If a spill is too large to clean up quickly, contact building services.

• Report uneven, defective flooring, worn spots in carpets, chipped tiles, and worn stair treads to building services.
Slips, Trips and Falls

Ice and snow

• No matter how well the ice & snow are removed from campus streets & sidewalks, people will encounter slippery surfaces when walking outdoors in the winter.

• Getting around campus in icy conditions calls for planning, caution, and a little common sense.

• Wearing boots or sensible shoes with non-skid soles. (Avoid plastic and leather soles and high heels.)

• When walking on an icy or snow-covered walkway, take short steps and walk at a slower pace so you can react quickly to a change in traction.
Ladder Safety

The Consumer Product safety Commission reports that each year more than 511,000 people are treated because they failed to use ladders safely. Most of the injuries are cuts, bruises and fractured bones. However, more than 300 people a year die from injuries related to ladders - that’s almost one death per day.

Make-shift ladders, chairs, boxes, and shelves should never be used as substitutes for a ladder – the risk is far too great.
Ladder Safety

Step Ladder Safety

Use a ladder of proper length to reach the working height that you need. Inside a building that probably means a stepladder.

Inspect the ladder before you use it.

Never use a damaged, loose, broken or bent ladder.
Electrical Safety

- Hundreds of deaths are attributed to contact with electrical current each year
- Avoid becoming a statistic by using safe work practices
- Contact Physical Plant to request repairs
Electrical Safety Reminders:

• Remember to unplug your space heater.
• Remember to unplug your coffee pot.
• Do not pull on cords. Always disconnect a cord by the plug.

*Use three-prong plugs.* Never use a three-prong grounding plug with the third prong broken-off. When using tools that require a third-wire ground, use only three-wire extension cords with three-prong grounding plugs and three-hole electrical outlets. Never remove the grounding prong from a plug! You could be shocked or expose someone else to a hazard. If you see a cord without a grounding prong in the plug, remove the cord from service immediately.
Electrical Safety Reminders:

- Do not overload your circuits. **NOTE:** All high wattage electrical equipment (refrigerator, heater, microwave, coffeemaker, toaster, hairdryer, coffee cup warmer) must be plugged directly into a wall outlet.

- Do not plug power strips into power strips. **NOTE:** Power strips may ONLY be used for low wattage equipment such as cell phone chargers, computer components, desk lamps and radios.
Electrical Safety

Electrical Safety Reminders:

• Electrical regulations require that a space of 36” is kept clear around all sides of an electrical panel.

• Do not store or temporarily place any items within the designated 36”.
Electrical Safety

Mechanical Rooms

• Mechanical rooms are not to be used as storage areas.

• There are various local state and federal regulations that prohibit the storage of combustible materials in designated Mechanical areas.
The Michigan Occupational Safety and Health Administration has established a Personal Protective Equipment (PPE) standard that requires:

• Workplace hazard assessments
• Proper selection of PPE based on the hazards
• Training for employees who must wear PPE
Personal Protective Equipment

Personal Protective Equipment (PPE)

Personal protective equipment includes, but is not limited to: Hard hats, prescription safety glasses, goggles, welders’ helmets, face shields, safety shoes, aprons, gloves, protective clothing, ear muffs or plugs, respirators for both dusts and toxic materials and other similar items.
Obtaining PPE

- EHS provides initial, basic PPE free of charge to all Calvin employees.
- Replacement PPE is provided, free of charge, by individual departments.
- Contact your immediate supervisor for replacement PPE.
- The supervisor will verify that the PPE and training are appropriate for the hazards of the work that the employee will be expected to perform.
Personal Protection Equipment

Hazard Assessment

• All Department chairs/Directors are responsible for contacting EHS to conduct Hazard Assessments for each job/task that is performed by staff in their respective departments.
• These assessments determine foot, head, eye, face, lungs, skin and hand hazards present and the proper PPE that should be worn.
Environmental Health and Occupational Safety

Personal Protection Equipment

Wearing and Maintenance

• All PPE must be maintained in a clean, sanitary and usable condition.
• All PPE must be worn in compliance with the hazard assessment and PPE determination.
• All employees are expected to perform their job in conformance with established safety standards, including the use of required PPE.
• Violations of such safety standards will be addressed in accordance with the college’s disciplinary procedures.
Managing Hazardous Waste (HW) is a shared responsibility

- Hazardous waste cannot be disposed of in the trash, dumpster or down the drain.
- EHS will arrange for transportation and disposal of HW.
- Report HW spills immediately and follow [Calvin’s Emergency Response Plan](#).
- Report violations to EHS and or Campus Safety.
Hazardous waste is any waste with any of the following characteristics:

- Flammable
- Corrosive
- Toxic
- Poisonous
- Carcinogenic
- Radioactive/mixed wastes
What is Hazardous Waste?

Examples of Hazardous Waste at Calvin:
- Spent solvents
- Waste or unused paint, adhesives, etc.
- Obsolete cleaning products
- Full or partially full obsolete aerosol cans
- Science lab waste
- Demolition debris containing asbestos or lead
What is Hazardous Waste?

Examples of Hazardous Waste that can be recycled or handled as UNIVERSAL WASTE:

- Electric lamps and ballasts
- Batteries
- Consumer electronics
- Mercury devices
- Pharmaceuticals
- Pesticides
- Used Motor oil
- Photo processing chemicals
- Anti freeze
Used or burnt out fluorescent light bulbs have very specific regulatory handling and labeling requirements. Do not throw fluorescent light bulbs into the general trash. Contact Building Services to change out bulbs. Building Services staff have received specialized training on the storage, handling and labeling of these bulbs.
• The Physical Plant will only recycle oil from Calvin owned vehicles. Calvin College encourages used oil recycling by all faculty, staff, and students, but it is your responsibility to take your used motor oil to an oil recycling center. DO NOT drop off used motor oil at the Service Building.
• Recycling personal used oil is the responsible thing to do. This link http://earth911.org/automotive will take you to Earth 911 where you can enter your zip code to generate a list of local commercial locations and municipal sites that accept used motor oil for recycling.
Battery Recycling

• Lead Acid Batteries
  • Stored on an impervious spill pallet inside the Recycling Building.
  • Contact Jennifer Ambrose, Environmental Health and Safety Officer for assistance. Her office extension is x66342.

• Dry Cell Batteries
  • Stored in covered, leak proof containers that are labeled with the words, “Waste Batteries”.
  • Contact Henry Kingma in Grounds for assistance.
Hazardous wastes are collected and stored in the Hazardous Waste Storage room.

If you have hazardous waste that should be disposed of:

• Ensure that the waste is labeled correctly including the words “Hazardous Waste”, name of the chemical, department and contact person.
• Contact EHS for further assistance.
The purpose of the Chemical Hygiene Plan (CHP) is to define work practices and procedures to help ensure that laboratory employees at Calvin College are protected from health hazards and to provide guidelines for working with hazardous chemicals.

The U.S. Department of Labor Occupational Safety and Health Administration (OSHA) requires employers to develop and maintain this plan. (Code of Federal Regulations, 29 CFR 1920.1450).

Calvin College’s Chemical Hygiene Plan
Laboratory employees are those who ordinarily work full or part time in a laboratory space.

Also included are office, custodial, maintenance, and repair personnel who, as part of their duties, regularly spend a significant amount of time within a laboratory environment.
Lab Safety

Responsibilities

• The Calvin College CHP defines the responsibilities that both the college and individual employees and students need to comply with.

• These responsibilities ensure compliance with applicable regulations and help to create a working environment that is safe and healthy for all employees and students.
The CHP covers information regarding laboratory safety and procedures in significant detail. Some of the areas included are:

- General Rules
- Personal Hygiene
- Food Handling
- Handling Glassware
- Housekeeping
- Electrical Safety
- Vacuum and Pressure Safety
- General Safety Equipment
- Personal Protective Equipment
- Basic Lab Procedures

A careful review of the CHP is necessary before beginning a position covered by the plan.
Suspected Exposure to Toxic Substances

• There may be times when employees or supervisors suspect that an employee has been exposed to a hazardous chemical to a degree and in a manner that might have caused harm to the employee.

• If circumstances suggest that such an exposure occurred, the victim is entitled to medical consultation and, if so determined in the consultation, also to a medical examination.

• All medical examinations and consultations shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.
Calvin College maintains a Radiation Protection Plan for the campus. The purpose of this plan is to:
• Provide a safe environment for personnel using radioactive isotopes or other sources of radiation (such as x-rays) in teaching, learning and research.
• Prevent unintended exposure to radiation or contamination by radioactive materials of all persons.
• Ensure that intended uses involve exposures that are at safe levels.
• Ensure safe storage of materials.
• Maintain accurate records of all materials in our possession or of material that has passed through our possession for permanent disposal.
• Ensure Calvin College is in full compliance with the requirements of all relevant State and Federal rules and regulations as detailed in any applicable NRC and State licenses.
Radiation Safety

Radiation Safety Officer

Agencies that govern the use, storage and disposal of radioactive materials require that a knowledgeable person be appointed as Radiation Safety Officer (RSO). The RSO is qualified by training and experience in radiation protection, and is available for advice and assistance on radiological safety matters.

The RSO for Calvin College is Paul Harper, Associate Professor of Physics and Astronomy, 526-6408.
What is Radiation?
Radiation is a form of energy.

Where does it come from?
Radiation comes from man-made sources such as x-ray machines, from the sun and outer space and from some radioactive materials such as uranium in soil.

Note: The United Nations Scientific Committee on the Effects of Atomic Radiation 2000 Report suggests that the average annual radiation dose from diagnostic x-ray in the U.S. has increased slightly so that the percentage of exposure from medical procedures may be slightly higher than that represented in the pie chart above. Source: NRC Fact Sheet on Biological Effects of Radiation
Radiation Safety

Health Effects of Radiation Exposure

Radiation affects the body in different ways, but the adverse health consequences of exposure may not be seen for many years. Health effects can range from mild effects such as skin reddening, to serious effects such as cancer and death. The extent of the health effect is determined by the amount of radiation absorbed by the body (dose), the type of radiation, the route of exposure, and the length of time a person is exposed.
Radiation Safety

Protecting Against Radiation Exposure

If you do not work with radioactive materials and/or you have not received specialized radiation safety training **DO NOT** enter rooms marked with the a radioactive materials sign.
What is Lockout?

“Lockout” refers to specific practices and procedures to safeguard employees from the unexpected startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities.
What you should know about Lockout...

NEVER attempt to start a piece of machinery or equipment that has a Lockout/Tagout device attached!

DO NOT flip a “blown” circuit breaker on your own. Contact Physical Plant for assistance.
Confined Spaces

Confined spaces have the following characteristics:

- Limited space, entry or exit
- Poor ventilation – lack of safe breathing air and possible buildup of hazardous gases, fumes and particles

Examples of a confined space include:

- tunnels
- pits
- boilers
- man holes, etc.

**DO NOT** enter a confined space. Contact Physical Plant or EH&S for assistance with confined spaces.
Construction/Demolition Areas

- Do not enter a construction/demolition area unless you are accompanied by a Physical Plant employee and wearing the appropriate personal protection (i.e. hardhat, steel toe shoes, etc.).

- There are many hazards in construction/demolition areas. Physical Plant employees receive specialized training to work safely in a construction environment.
Awareness of Physical Plant Activities

Construction/Demolition Areas

Hazards include, but are not limited to:

- **Welding**: Many welding and cutting processes produce fumes and gases, which may be harmful to your health. In addition, looking at a welding arc without proper eye protection can result in permanent damage to the cornea.

- **Falling Objects**: Falling objects may seriously injure or kill. Falling Objects are common problems on construction and demolition sites, and are also sometimes a problem during maintenance work.

- **Excessive Noise**: Excessive noise is a known health hazard. Loss of hearing may be either full or partial and either temporary or permanent. The equipment and activities necessary to complete construction and demolition projects can generate loud noises.

- **Respiratory**: Depending on the material involved (i.e. welding fumes, commercial strength adhesive, etc.) effects can range from irritation of the eyes, skin and respiratory system to more severe complications.
Calvin College has a Golf Cart/Utility Vehicle Policy that must be followed by all people who drive carts on campus.

This policy was created in response to MIOSHA regulatory requirements and past experiences with these vehicles on campus.

Each individual who will operate a golf cart/utility vehicle and/or supervise operators of these vehicles must read through the policy, receive hands-on training from an experienced cart operator and sign the training verification form on the last page of the policy.

The original, signed training verification form should be kept with the department training records and a copy sent to EHS.
Environmental Health & Safety (EHS)

EHS officers, Heather Chapman and Jennifer Ambrose, are available to listen, investigate and help. Call 6-8591 or 6-6342 with questions.

EHS web site contains many resources for you.
Thank you!

You have successfully completed the *New Employee Level 200 – Environmental Health and Occupational Safety Training* module. Please complete the [Training Verification Form](#) and submit it electronically within one week.